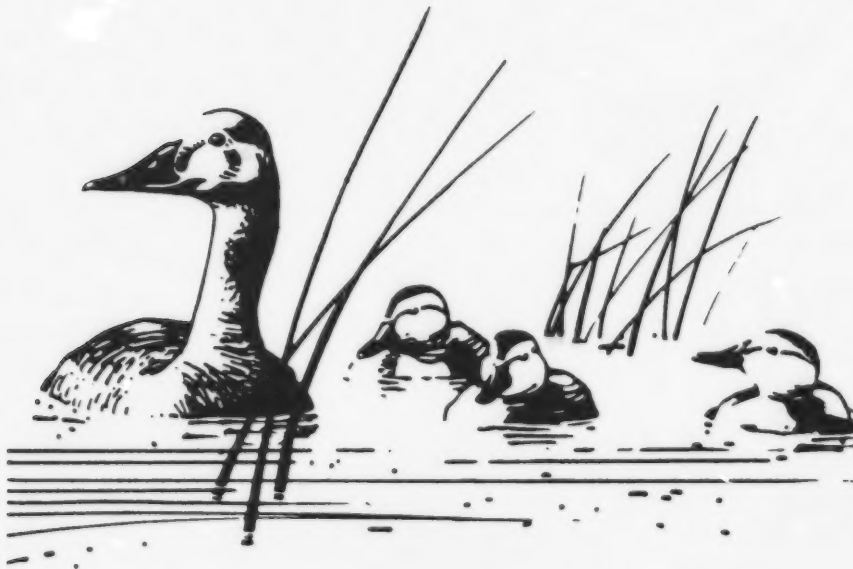

**NORTH
AMERICAN
WATERFOWL
MANAGEMENT
PLAN**

MANITOBA IMPLEMENTATION PLAN

EXECUTIVE SUMMARY



**Endorsed by the Prairie Habitat Joint Venture
Steering Committee**



**Delta Waterfowl and
Wetlands Research Station**

**Manitoba
Agriculture**

**Manitoba
Natural Resources**



**Environment
Canada
Canadian Wildlife
Service**



Ducks Unlimited Canada

**NORTH AMERICAN WATERFOWL MANAGEMENT PLAN
PRAIRIE HABITAT JOINT VENTURE**

**MANITOBA IMPLEMENTATION PLAN
EXECUTIVE SUMMARY**

October, 1988

MANITOBA IMPLEMENTATION PLAN - EXECUTIVE SUMMARY

The Manitoba Implementation Plan (MIP) of the Prairie Habitat Joint Venture is a multi-faceted land use approach aimed at addressing the focus of the North American Waterfowl Management Plan (NAWMP); a declining continental waterfowl population, and in particular mallards and pintails. Program applications that focus on maintaining a healthy and diverse landscape through integrated land use are emphasized. Such applications embrace soil and water conservation benefits while at the same time improving waterfowl production. Land use modifications are intended to demonstrate the value of changing land use practices in the long term over the entirety of agro Manitoba. As well, shorter term, intensive wildlife habitat program applications are recommended to help achieve waterfowl population objectives during the 15 year term of MIP, while the longer term land use modification programs are becoming ingrained in the agricultural community.

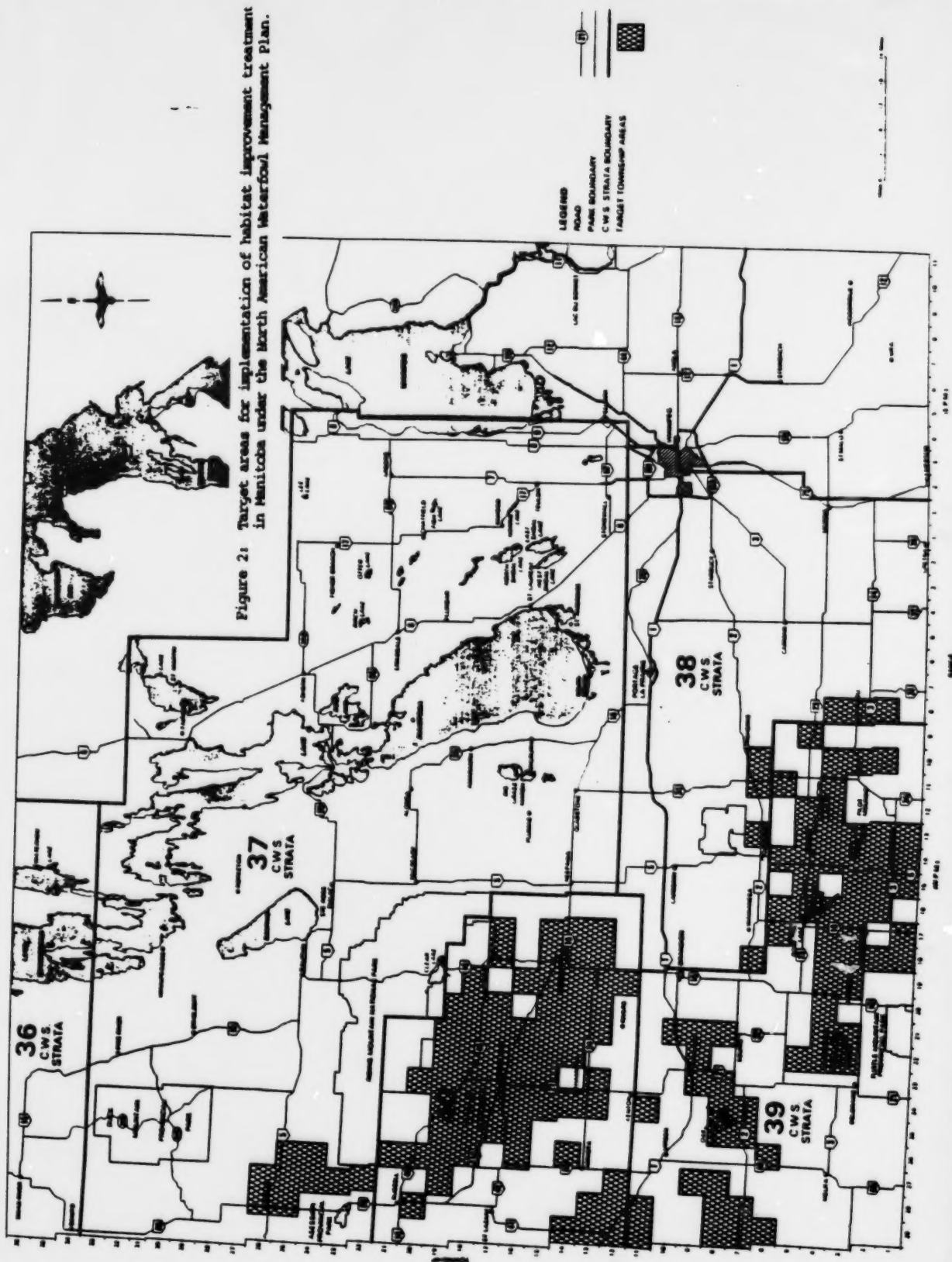
Objectives

1. To produce and maintain an average mallard breeding population of 400,000 (186,000 pairs).
2. To produce an average fall flight of 760,000 mallards.
3. To produce and maintain an average breeding population of 2.0 million ducks in Manitoba.
4. To achieve these objectives by affecting land use management on 499,000 acres in prime waterfowl areas through a variety of program applications.
5. To achieve these objectives by integrating a strategy to enhance duck production with an agricultural soil and water conservation strategy.

Target Area

Waterfowl habitat was prioritized based on the Canada Land Inventory data for waterfowl, the 1981 Forest Inventory and 1986 Landsat satellite imagery. The most productive waterfowl habitat lies primarily in the pothole-studded aspen parkland encompassing CWS survey strata 39 and 40, and small portions of strata 37 and 38 (Figure 1). These areas accounted for 55% of the breeding mallards on average during the period 1970-79.

In total, 146 townships (5,256 square miles) were selected for habitat initiatives, of which 130 were in strata 39 and 40 (Figure 2). The Manitoba Heritage Marsh Program, established in 1985, and having objectives of designating and managing significant moulting and staging marshes, will be enlarged through the implementation plan. These marshes provide water and space for waterfowl during severe drought periods, thereby increasing survivorship.



● HERITAGE MARSHES

1. GRANT'S LAKE
2. OAK HAMMOCK
3. PROVEN LAKE
4. SASKERAM W.M.A.
5. SUMMERBERRY
6. DELTA
10. LIDCLIFF

● I. CANDIDATE HERITAGE MARSHES

- | | |
|---------------------|---------------------|
| 7. OAK-PLUM | 13. TOM LAMB W.M.A. |
| 8. NETLEY-LIBAU | 14. MARSHY POINT |
| 9. BIG GRASS | 15. TURTLE RIVER |
| 11. DENNIS LAKE | 16. DOG LAKE |
| 12. WHITEWATER LAKE | |
| 13. TOM LAMB W.M.A. | |

○ II. CANDIDATE HERITAGE MARSHES

- | | |
|------------------------------|------------------|
| 17. SHOAL LAKES-VESTFOLD | 22. HECLA |
| 18. PINEMUTA-LAKE ST. MARTIN | 23. PORTIA |
| 19. BIG POINT | 24. REYKJAVIK |
| 20. LIZARD LAKE | 25. HUNTER-MAPLE |
| 21. RAT RIVER SWAMP | |

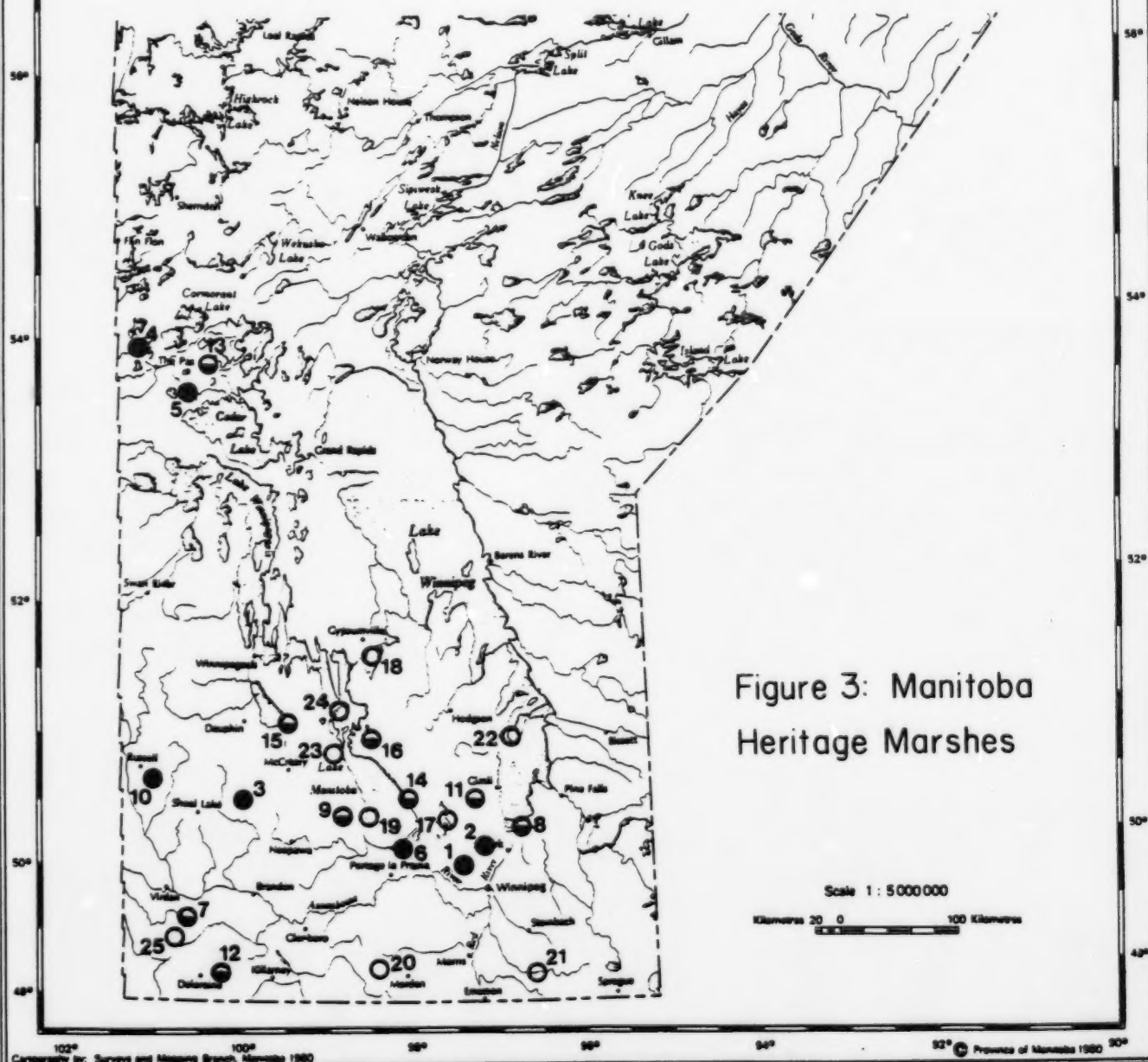


Figure 3: Manitoba
Heritage Marshes

Computer Planning Tool

To determine which program options would be most cost effective, a Computer Planning Tool (CPT) was developed. It consisted of an Economic Model and a Mallard Production Model. The Economic Model allowed the testing of a wide variety of land use treatments to determine costs, effects on land use and duck production. Outputs for each treatment from this model included manpower needs, costs for development and management, summaries of acreage for each treatment and an estimate of ducks produced.

The Mallard Production Model was used to predict whether or not various land management treatments tested in the Economic Model could achieve waterfowl population objectives. It accounted for variables in mallard breeding biology as well as baseline population data from 1986, wetland conditions, pair populations and habitat carrying capacity.

Direct Wildlife Habitat Options

Four direct wildlife habitat options were selected using the CPT:

	<u>Acres</u> <u>(000)</u>	<u>Number</u> <u>(000)</u>
1. Fenced dense nesting cover (DNC)	16	
2. Unfenced DNC	6	
3. Inter-pothole seeding	5	
4. Nesting structures		4.0
	<u>27</u>	<u>4.0</u>

Land Use Modification Options

Five land use modification options were selected with the aid of the CPT:

	<u>Acres</u> <u>(000)</u>
1. Rotational grazing	100
2. Chemical fallow/stubble mulch	148
3. Winter wheat/minimum till	123
4. Drought proofing	72
5. Delayed haying	29
	<u>472</u>

Availability of these program options will enable farmers to receive financial incentives for initiating conservation farming techniques. While the major benefits of these programs are agriculturally related and accrue from a soil and water conservation standpoint, these important changes in land use will create concomitant benefits for waterfowl production.

Program components in this category will be applied to 472,000 acres or 15.5% of the total land base in the target zone. These applications will be very effective from a soil and water conservation perspective, but cost effectiveness from a duck production standpoint is much less than the direct wildlife habitat options.

Combined, the MIP will affect 27,000 acres (0.9%) through direct wildlife habitat options and 472,000 acres (15.5%) through land use modification options. Total area of the target zone treated will be 499,000 acres (16.4%). The vast majority of the land base of the target zone (2,548,000 acres or 83.6%) will not be directly affected. It is anticipated that there will be significant changes in land use in the untreated area through landowner adoption of techniques that will provide favorable economic return and through policy changes.

Policy Changes

Success of the MIP in achieving its objectives depends on the existing wetland base throughout the province remaining intact over time. Therefore, it was assumed that there would be no significant loss of the wetland base over the 15 year program term. Further, it was assumed that certain policy changes having high priority for habitat preservation and enhancement would be implemented. For example:

1. The Canada Wheat Board quota system
2. Municipal taxation
3. Canada's patent laws on herbicides
4. Provincial water management
5. Income tax legislation which presently allows drainage and clearing as deductible expenses
6. Enhanced crop damage compensation and prevention programs

Manitoba agencies involved in the MIP will take action on these policy issues within their jurisdictional influence.

Manitoba Heritage Marsh Program

The Manitoba Heritage Marsh Program will provide staging and molting habitats for ducks produced from the MIP as well as incremental waterfowl production as these marshes are developed.

Of the 25 Heritage Marshes and candidate Heritage marshes, 5 are within the target area of the MIP (Figure 3). In addition, 3 other Heritage Marshes are within 35 miles of the target zone. As Heritage Marshes are designated, critical waterfowl habitats associated with them on Crown land will be protected. An estimated \$40 million will be required for habitat acquisition, nesting cover developments and management associated with these marshes.

Waterfowl Damage Control

Through delivery of the MIP, the fall flight of mallards alone is projected to increase by 108,000 annually. Although waterfowl damage is related primarily to fall harvest chronology and weather, rather than duck numbers, the perception that additional ducks means more damage must be addressed.

It is proposed that the existing level of funding in the Manitoba federal-provincial crop damage prevention program be increased by 50% to \$600,000 from \$400,000 annually. Additional funds would provide for new lure crop and bait station sites, deployment of more zone bangers, increased prevention staff and an effective communication and public relations campaign. Manitoba along with Canada will consider other measures to reduce the economic impact to the grain farmer including increased levels of compensation for losses.

Evaluation Program

An Evaluation Program will form an integral component of the MIP. It will assess the effectiveness of various program options in meeting objectives and aid in adjusting program emphasis where required. Total cost of evaluation over the 15 year term of the Manitoba Implementation Plan is estimated at \$3.8 m.

Communication Program

Throughout the course of the MIP, a coordinated and effective program of public information and education will be essential to the successful delivery of the program. Components should include practical demonstration tours, media events, slide show presentations, public meetings, on farm landowner presentations, publications and brochures, newspaper articles, ads and interviews, video productions and public promotional events. Annual cost is estimated at \$280,000 with a 15 year total of \$4.2 m.

Waterfowl Production

Through successful delivery of the MIP, an average of 84,000 mallard recruits (returning fledged juveniles) will be produced annually from the target zone in the last five years of the program. The 84,000 recruits enables the Manitoba spring mallard breeding population goal of 400,000 to be achieved.

In achieving the mallard spring population goal, fenced DNC will produce 29.2% of recruits, unfenced DNC 3%, inter-pothole seeding 0.2% and nest baskets 4.6% (see Table 3). In total, the direct wildlife habitat options will produce 36.6% of the required mallards from 0.9% of the land base in the target zone.

Land use modification options will produce 22.9% of mallard recruits from a land base comprising 15.5% of the target zone (see Table 3).

The untreated sector of the target zone (83.6%) and adjacent areas outside the target zone will produce 40.5% of mallard recruits, if the direct wildlife habitat options, the land use modification options and policy changes are implemented as outlined in the MIP.

Program Costs

Total cost of the MIP is \$134.3 m. Of this sum, \$26.9 m. (20%) is aimed at direct wildlife habitat options while \$39.3 m. (29.3%) is targeted for land use modification options (see Table 4). Other major program areas are Administration \$17.1 m. (12.7%), Evaluation \$3.8 m. (2.8%), Waterfowl Damage Control \$3.0 m. (2.2%) and Communications \$4.2 m. (3.2%).

Expenditure for the Heritage Marsh component is also significant at \$40.0 m. (29.8%).

Table 1. Area of program application (acres)

Options	Acres (000)	% of Target Zone
Direct Wildlife Options		
DNC fenced	16	
DNC unfenced	6	
Inter-pothole seeding	5	
Nesting baskets ^a		
Subtotal	<u>27</u>	0.9
Land Use Modification Options		
Rotational grazing	100	
Chemical fallow/stubble mulch	148	
Winter wheat/minimum till	123	
Drought proofing	72	
Delayed haying	29	
Subtotal	<u>472</u>	15.5
Subtotal Treated Acreage	499	
Subtotal Untreated Acreage	<u>2,548</u>	<u>83.6</u>
Total Land Area in Target Zone	<u>3,047^b</u>	<u>100.0</u>

^a3,900 nesting structures.

^bTarget zone is comprised of 146 townships totaling 5,256 square miles or 3,363,840 a. Of the area, 316,840 a. is made up of open water, roads, urban centres, farmsteads, etc., leaving 3,047,000 a. for program application.

Table 2. Summary of area of program application (acres)

Options	Acres (000)	% of Target Zone
Direct Wildlife Options	27	0.9
Land Use Modification Options	472	15.5
Untreated Land Area	<u>2,548</u>	<u>83.6</u>
Total Land Area in Target Zone ^a	<u><u>3,047</u></u>	<u><u>100.0</u></u>

^aTarget zone is comprised of 146 townships totaling 5,256 square miles or 3,363,840 acres. Of the area 316,840 a. is made up of open water, roads, urban centres, farmsteads, etc., leaving 3,047,000 acres for program application.

Table 3. Summary of mallard production from delivery of the Manitoba Implementation Plan

Options	Mallard Recruits	% of Recruits
Direct Wildlife Options		
DNC fenced	24,500	29.2
DNC unfenced	2,500	3.0
Inter-pothole seeding	200	0.2
Nesting baskets	3,500	4.2
Subtotal	<u>30,700</u>	<u>36.6</u>
Land Use Modification Options		
Rotational grazing	5,400	6.4
Chemical fallow/stubble mulch	770	0.8
Winter wheat/minimum till	5,000	6.0
Drought proofing	6,900	8.2
Delayed haying	1,300	1.5
Subtotal	<u>19,300</u>	<u>22.9</u>
Untreated Land Area	<u>34,000</u>	<u>40.5</u>
Total	<u><u>84,000</u></u>	<u><u>100.0</u></u>

Table 4. Summary of Manitoba Implementation Plan costs over 15 years

Program Options	Cost	
	(\$ Million)	%
Direct Wildlife Options		
DNC fenced	19.7	14.7
DNC unfenced	3.8	2.8
Inter-pothole seeding	1.4	1.0
Nesting baskets	2.0	1.5
Subtotal	<u>26.9</u>	<u>20.0</u>
Land Use Modification Options		
Rotational grazing	1.2	0.9
Chemical fallow/stubble mulch	1.0	0.7
Winter wheat/minimum till	0.5	0.4
Drought proofing	33.4	24.9
Delayed haying	3.2	2.4
Subtotal	<u>39.3</u>	<u>29.3</u>
Heritage Marsh Program	40.0	29.8
Administration ^a	17.1	12.7
Evaluation	3.8	2.8
Waterfowl Damage Control	3.0	2.2
Communications	4.2	3.2
Subtotal	<u>68.1</u>	<u>50.7</u>
Total	<u>134.3</u>	<u>100.0</u>

^aIncludes \$4.2 million to implement policy review and changes.